ABSTRACT

Process for manufacturing monolithic composite structures comprising providing first and second subcomponents (1, 2) of composite material, attaching an expansion compensating tooling to the second subcomponent, placing the second subcomponent along with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive, covering the assembly comprising the first and second subcomponents and the tooling with a vacuum bag, performing an autoclave cycle for curing the curable material contained in said assembly under high temperature and pressure conditions, withdrawing said assembly from the curing autoclave and removing the expansion compensating tooling to obtain the desired monolithic composite structure. The tooling for carrying out the process comprises metal L- or I-shaped beams having a rough surface adapted to be applied to the second subcomponent. The invention is useful for manufacturing aircraft parts.